

wherein

Het is a bicyclic fused ring heteroaromatic group;

g is zero or the integer 1, 2, 3 or 4;

Each  $R^{16}$ , which may be the same or different, is an atom or group  $-L^3(Alk^2)_tL^4(R^4)_u$ ,

$L^3$  and  $L^4$ , which may be the same or different, are each a covalent bond or a linker atom or group -O-, -S-, -C(O)-, -C(O)O-, -OC(O)-, -C(S)-, -S(O)-, -S(O)<sub>2</sub>-, -N(R<sup>8</sup>)-, -N(R<sup>8</sup>)O-, -N(R<sup>8</sup>)N-, -CON(R<sup>8</sup>)-, -OC(O)N(R<sup>8</sup>)-, -CSN(R<sup>8</sup>)-, -N(R<sup>8</sup>)CO-, -N(R<sup>8</sup>)C(O)O-, -N(R<sup>8</sup>)CS-, -S(O)<sub>2</sub>N(R<sup>8</sup>)-, -N(R<sup>8</sup>)S(O)<sub>2</sub>-, -N(R<sup>8</sup>)CON(R<sup>8</sup>)-, -N(R<sup>8</sup>)CSN(R<sup>8</sup>)-, or -N(R<sup>8</sup>)SO<sub>2</sub>N(R<sup>8</sup>)-,

$R^8$  is a hydrogen atom or an optionally substituted C<sub>1-6</sub>alkyl group,

t is zero or the integer 1,

u is an integer 1, 2 or 3,

$Alk^2$  is an aliphatic or heteroaliphatic chain, and

$R^4$  is a hydrogen or halogen atom or a group selected from an optionally substituted C<sub>1-6</sub>alkyl or C<sub>3-8</sub> cycloalkyl group, -OR<sup>5</sup> (where R<sup>5</sup> is a hydrogen atom, an optionally substituted C<sub>1-6</sub>alkyl or C<sub>3-8</sub> cycloalkyl group), -SR<sup>5</sup>, -NR<sup>5</sup>R<sup>6</sup> (where R<sup>6</sup> is as just defined for R<sup>5</sup> and may be the same or different), -NO<sub>2</sub>, -CN, -CO<sub>2</sub>R<sup>5</sup>, -SO<sub>3</sub>H, -SOR<sup>5</sup>, SO<sub>2</sub>R<sup>5</sup>, -SO<sub>3</sub>R<sup>5</sup>, -OCO<sub>2</sub>R<sup>5</sup>, -CONR<sup>5</sup>R<sup>6</sup>, -OCONR<sup>5</sup>R<sup>6</sup>, -CSNR<sup>5</sup>R<sup>6</sup>, -COR<sup>5</sup>, -OCOR<sup>5</sup>, -N(R<sup>5</sup>)COR<sup>6</sup>, -N(R<sup>5</sup>)CSR<sup>6</sup>, -SO<sub>2</sub>N(R<sup>5</sup>)(R<sup>6</sup>), -N(R<sup>5</sup>)SO<sub>2</sub>R<sup>6</sup>, N(R<sup>5</sup>)CON(R<sup>6</sup>)(R<sup>7</sup>) (where R<sup>7</sup> is a hydrogen atom, an optionally substituted C<sub>1-6</sub>alkyl or C<sub>3-8</sub>cycloalkyl group), -N(R<sup>5</sup>)CSN(R<sup>6</sup>)(R<sup>7</sup>) or

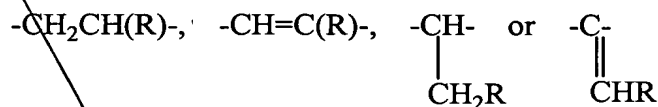
~~-N(R<sup>5</sup>)SO<sub>2</sub>N(R<sup>6</sup>)(R<sup>7</sup>),~~

~~provided that when t is zero and each of L<sup>3</sup> and L<sup>4</sup> is a covalent bond then u is the integer 1 and R<sup>4</sup> is other than a hydrogen atom;~~

~~L<sup>2</sup> is a covalent bond or an atom or group -O-, -S-, -C(O)-, -C(S)-, -S(O)-, -S(O)<sub>2</sub>, -N(R<sup>8</sup>)- or -C(R<sup>8</sup>)(R<sup>8a</sup>)- (where R<sup>8a</sup> is an atom or group as defined for R<sup>8</sup> and may be the same or different);~~

~~Ar<sup>2</sup> is an optionally substituted aromatic or heteroaromatic group;~~

~~Alk is a chain~~



~~in which R is a carboxylic acid (-CO<sub>2</sub>H), a carboxylic acid ester, a carboxylic acid amide, or a carboxylic acid biostere;~~

~~R<sup>1</sup> is a hydrogen atom or a C<sub>1-6</sub>alkyl group;~~

~~L<sup>1</sup> is a covalent bond or a linker atom or group -O-, -S-, -C(O)-, -C(O)O-, -OC(O)-, -C(S)-, -S(O)-, -S(O)<sub>2</sub>-, -N(R<sup>8</sup>)-, -N(R<sup>8</sup>)O-, -N(R<sup>8</sup>)N-, -CON(R<sup>8</sup>)-, -OC(O)N(R<sup>8</sup>)-, -CSN(R<sup>8</sup>)-, -N(R<sup>8</sup>)CO-, -N(R<sup>8</sup>)C(O)O-, -N(R<sup>8</sup>)CS-, -S(O)<sub>2</sub>N(R<sup>8</sup>)-, -N(R<sup>8</sup>)S(O)<sub>2</sub>-, -N(R<sup>8</sup>)CON(R<sup>8</sup>)-, -N(R<sup>8</sup>)CSN(R<sup>8</sup>)-, or -N(R<sup>8</sup>)SO<sub>2</sub>N(R<sup>8</sup>)-;~~

~~Alk<sup>1</sup> is an optionally substituted aliphatic chain;~~

~~n is zero or the integer 1;~~

~~R<sup>2</sup> is a hydrogen atom or an optionally substituted heteroaliphatic, C<sub>3-10</sub>cycloalkyl, C<sub>3-10</sub>cycloalkenyl, C<sub>3-10</sub>heterocycloalkyl, C<sub>3-10</sub>heterocycloalkenyl, C<sub>7-10</sub>bicycloalkyl, C<sub>7-10</sub>tricycloalkyl, C<sub>7-10</sub>bicycloalkenyl, C<sub>7-10</sub>tricycloalkenyl, C<sub>7-10</sub>bicycloheteroalkyl, C<sub>7-10</sub>tricycloheteroalkyl, C<sub>7-10</sub>bicycloheteroalkenyl, C<sub>7-10</sub>tricycloheteroalkenyl, aromatic or~~

Sub  
B1

Ar

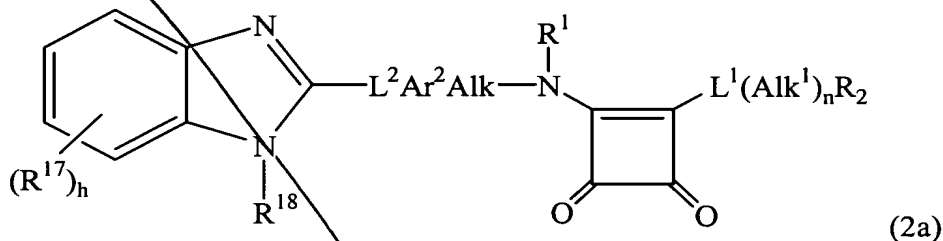
Sub B1  
A1  
heteroaromatic group, wherein said heteroaliphatic, heterocycloalkyl, heterocycloalkenyl, bicycloheteroalkyl, tricycloheteroalkyl, bicycloheteroalkenyl and tricycloheteroalkenyl groups contain one, two, three, or four heteroatoms or heteroatom-containing groups as defined for  $L^3$  and  $L^4$ , which may be the same or different;

provided that Het is not a 2,6-naphthyridin-1-yl, isoquinolin-1-yl, 2,7-naphthyridin-1-yl or quinazolin-4-yl group;

and the salts, solvates, hydrates and N-oxides thereof.

A2  
12. (Amended) A compound according to Claim 1 in which  $L^1$  is a covalent bond, n is zero and  $R^2$  is an optionally substituted  $C_{5-7}$ heterocycloalkyl or  $C_{5-7}$ heterocycloalkenyl group.

15. (Amended) A compound according to Claim 1 of formula (2a):



wherein:

$R^{17}$  is an atom or group  $R^{16}$  as previously defined;

h is zero or the integer 1, 2 or 3;

$R^{18}$  is a hydrogen atom or an atom or group  $R^{16}$  as previously defined;

and the salts, solvates, hydrates and N-oxides thereof.

A4  
Sub B4  
19. (Amended) A compound which is:

~~S-2-[[2-Dipropylamino)-3,4-dioxo-1-cyclobutenyl]amino}-3-{4-[(1-methylbenzimidazol-2-yl)amino]phenyl}propanoic acid;~~

~~S-2-[[2-Dipropylamino)-3,4-dioxo-1-cyclobutenyl]amino}-3-{4-[(1-methylbenzimidazol-2-yl)amino]phenyl}propanoic acid;~~

~~S-2-[[2-(2-Methylpiperidin-1-yl)-3,4-dioxo-1-cyclobutenyl]amino}-3-{4-[(1-methylbenzimidazol-2-yl)amino]phenyl}propanoic acid;~~

~~(S)-3-[4-(Thiophen[2,3-d]pyrimidin-4-ylamino)phenyl]2-(2-(diethylamino-3,4-dioxocyclobut-1-enylamino)propanoic acid;~~

~~and the salts, solvates, hydrates, N-oxides and carboxylic acid esters thereof.~~

Sub  
B4  
A4

21. (Amended) A method for the treatment of inflammatory arthritis, multiple sclerosis, allograft rejection, diabetes, inflammatory dermatoses, asthma or inflammatory bowel disease comprising administering to a mammal suffering from such a disease or disorder a therapeutically effective amount of a compound according to Claim 1.

23. (Amended) A method according to Claim 21 wherein said inflammatory arthritis is selected from the group consisting of rheumatoid arthritis, vasculitis and polydermatomyositis.

A6

24. (Amended) A method according to Claim 21 wherein said inflammatory dermatoses are selected from the group consisting of psoriasis and dermatitis.

25. (Amended) A method of inhibiting, in a mammal suffering from a disease or disorder associated with elevated  $\alpha_4$  integrin activity, the binding of  $\alpha_4$  integrins to the ligands

thereof, comprising administering to the mammal an effecting amount of a compound according to Claim 1.

26. (Amended) A method according to Claim 25 wherein the  $\alpha_4$  integrins are selected from the group consisting of  $\alpha_4\beta_1$  and  $\alpha_4\beta_7$  integrins.

Please cancel claim 22, without prejudice.

Please add the following new claim.

27. (New) A compound according to claim 19 wherein the carboxylic acid esters are selected from the group consisting of methyl, ethyl, propyl, and i-propyl.

#### REMARKS

Following entry of the foregoing amendments, claims 1 to 21 and 23 to 27 will be pending in the application. Claims 1, 12, 15, 19, 21, and 23 to 26 have been amended herein. Claim 22 has been cancelled and new claim 27 has been added, herein.

Applicants respectfully request reconsideration of the rejections of record in view of the foregoing amendments and the following remarks.

Preliminarily, Applicants acknowledge with appreciation the Examiner's indication that the compounds defined by the claims are novel in view of the following references: Pamukcu, *et al.*, U.S. Patent No. 6,111,220; Coates, *et al.*, WO 94/29277; and Lombardo, *et al.*, WO 00/35855.